EXECUTIVE SUMMARY

Since 1964, the Job Corps program has been a central part of federal efforts to provide employment assistance to disadvantaged youths between the ages of 16 and 24. Job Corps is an intensive, comprehensive program whose major service components include academic education, vocational training, residential living, health care and health education, counseling, and job placement assistance. These services are currently delivered at 119 Job Corps centers nationwide. Most Job Corps students reside at Job Corps centers while training, although about 12 percent are nonresidential students who live at home. Each year, Job Corps serves more than 60,000 new enrollees and costs more than $1 billion.

The National Job Corps Study, funded by the U.S. Department of Labor (DOL), was designed to provide a thorough and rigorous assessment of the impacts of Job Corps on key participant outcomes. The cornerstone of the study was the random assignment of all youth found eligible for Job Corps to either a program group or a control group. Program group members were allowed to enroll in Job Corps; control group members were not (although they could enroll in other training or education programs).

This report presents estimates of the short-term impacts of Job Corps on participants' employment and related outcomes during the 30 months after random assignment. The outcome measures for the analysis were obtained from interview data.

The report answers the following three research questions:

1. ***How effective is Job Corps overall at improving the employability of disadvantaged participants in the short term?*** Job Corps participation led to (1) increases of about 1,000 hours (or about one school year) in time spent in education and training; (2) substantial increases in the attainment of GED and vocational certificates; (3) modest short-term earnings gains by the beginning of the third year after random assignment (resulting in an 11 percent gain in the last quarter of the 30-month period); (4) reductions of about 20 percent in arrests, convictions, and incarcerations for convictions; (5) small beneficial impacts on the receipt of public assistance and self-assessed health status; and (6) no impacts on self-reported alcohol and illegal drug use, family formation, or mobility.

2. ***Do Job Corps short-term impacts differ for youths with different characteristics?*** Positive short-term gains were found broadly across most key subgroups defined by youth characteristics at baseline. However, there is some evidence that impacts were somewhat larger for youths who are at particular risk of poor labor market outcomes: very young students, females with children at random assignment, and older youths who did not possess a high school credential at random assignment.

3. ***How effective are the residential and nonresidential components of Job Corps in the short term?*** The residential program component was effective in the short term for broad groups of students. Earnings and employment impacts late in the follow-up period for those assigned to the residential component were positive overall, and they were similar for residential males, females with children, and females without children. The nonresidential component substantially improved short-term employment and earnings of females with children, but it did not improve these outcomes for males or for females without children.

The findings presented here should be interpreted as *short-term* program impacts, because the 30-month follow-up period includes a relatively short postenrollment period for some program group members who enrolled in Job Corps. Program group participants reported staying in Job Corps for an average of about eight months, and over one-quarter reported staying for more than one year. Estimates of longer-term impacts based on 48-month follow-up interviews will be presented in a future report. A benefit-cost analysis to assess whether the benefits of Job Corps are commensurate with the substantial public resources invested in it will also be conducted using the 48-month interview data.

STUDY DESIGN

The results for the short-term impact analysis are based on a comparison of eligible program applicants who were randomly assigned to a program group (who were offered the chance to enroll in Job Corps) or to a control group (who were not). The key features of this experimental design are as follows:

The impact evaluation is based on a fully national sample of eligible Job Corps applicants. With a few exceptions, the members of the program and control groups were randomly selected from *all* youths who applied to Job Corps in the contiguous 48 states and the District of Columbia and who were found eligible for the program.

Sample intake occurred between November 1994 and February 1996. All youths who applied to Job Corps for the first time between November 1994 and December 1995, and were found eligible for the program by the end of February 1996 were included in the study--a total of 80,883 eligible applicants.

During the sample intake period, 5,977 Job Corps-eligible applicants were randomly selected to the control group. Approximately 1 eligible applicant in 14 (7 percent of 80,883 eligible applicants) was assigned to the control group. For both programmatic and research reasons, the sampling rate to the control group differed somewhat across some youth subgroups. Thus, sample weights were used in all analyses, so that the impact estimates could be generalized to the intended study population.

Control group members were not permitted to enroll in Job Corps for a period of three years, although they were able to enroll in other programs available to them. Thus, the outcomes of the control group represent the outcomes that the program group would have experienced if they had not been given the opportunity to enroll in Job Corps. Because control group members were allowed to enroll in other education and training programs, the comparisons of program and control group outcomes represent the effects of Job Corps *relative to other available programs* that the study population would enroll in if Job Corps were not an option. The impact estimates do not represent the effect of the program relative to no education or training; instead, they represent the incremental effect of Job Corps.

During the sample intake period, 9,409 eligible applicants were randomly selected to the research sample as members of the program group.[1] Because random assignment occurred after youths were determined eligible for Job Corps (and *not* after they enrolled in Job Corps centers), the program group includes youths who enrolled in Job Corps (about 73 percent of eligible applicants), as well as those who did not enroll, the so-called "no-shows" (about 27 percent of eligible applicants). Although the study's research interest focuses on enrollees, all youths who were randomly assigned, including those who did not enroll at a center, were included in the analysis to preserve the benefits of the random assignment design. However, as discussed below, statistical procedures were also used to estimate impacts for Job Corps participants only.

Job Corps staff implemented random assignment procedures well. Using program data on all new center enrollees, we estimate that less than 0.6 percent of youths in the study population were not randomly assigned. In addition, only 1.4 percent of control group members enrolled in Job Corps before the end of the three-year period during which they were not supposed to enroll. Hence, we believe that the research sample is representative of the youths in the intended study population and that the bias in the impact estimates due to contamination of the control group is very small.

DATA SOURCES, OUTCOME MEASURES, AND ANALYTIC METHODS

The impact analysis used a variety of data sources, outcome measures, and analytic methods to address the main study questions, as outlined next.

The analysis relied primarily on interview data covering the 30-month period after random assignment. Follow-up interview data collected 12 and 30 months after random assignment were used to construct outcome measures for the impact analysis. In addition, baseline interview data, collected soon after random assignment, were used to create subgroups defined by youth characteristics at random assignment, and to construct outcome measures that pertain to the period between the random assignment and baseline interview dates.

Response rates to the baseline, 12-month, and 30-month interviews were fairly high and were similar for program and control group members. The response rate was 95 percent to the

[1]The remaining 65,497 eligible applicants were randomly assigned to a program nonresearch group. These youths were allowed to enroll in Job Corps but are not in the research sample.

baseline interview, 90 percent to the 12-month follow-up interview, and 79 percent to the 30-month interview. Response rates were similar across key subgroups.

The primary sample used for the analysis includes those who completed 30-month interviews. This sample contains 11,787 youths (7,311 program group members and 4,476 control group members). About 96 percent of this sample also completed 12-month interviews. Furthermore, baseline interview data are available for everyone in this sample, because all youths completed either the full baseline interview or an abbreviated baseline interview in conjunction with the 12-month interview. Thus, complete data are available for most of the analysis sample.

The study estimated impacts on the following outcome measures that we hypothesized could be influenced by participation in Job Corps: (1) education and training, (2) employment and earnings, and (3) nonlabor market outcomes. The nonlabor market outcomes include welfare, crime, alcohol and illegal drug use, health, family formation, and mobility. In general, outcome measures were defined over several periods after random assignment. We constructed measures by quarter (to examine changes in impact estimates over time), for months 1 to 12 (a period when many program group members were enrolled in Job Corps), for months 13 to 24 (a period of still significant but less intensive Job Corps participation), for months 25 to 30 (a postprogram period for most program group members), and for the entire 30-month period.

We present estimates of Job Corps impacts per eligible applicant and per Job Corps participant. The estimates of Job Corps impacts *per eligible applicant* were obtained by computing differences in the distribution of outcomes between all program and control group members. This approach yields unbiased estimates of the effect of Job Corps for those offered the opportunity to enroll in the program. These impacts are pure experimental estimates, because random assignment was performed at the point that applicants were determined to be eligible for the program.

The comparison of the outcomes of all program and control group members yields *combined* impact estimates for the 73 percent of program group members who enrolled in Job Corps centers and the 27 percent who did not. Policymakers, however, are more concerned with the effect of Job Corps on those who enrolled in a center and received Job Corps services. This analysis is complicated by the fact that we do not know which control group members would have shown up at a center had they been in the program group. However, this complication can be overcome if we assume that Job Corps has no impact on eligible applicants who do not enroll in centers. In this case, the impact *per participant* can be obtained by dividing the impact *per eligible applicant* by the proportion of program group members who enrolled in Job Corps (73 percent). We present estimated impacts both per eligible applicant and per participant.

Impact estimates were obtained for key subgroups defined by youth characteristics at baseline. The purpose of this subgroup analysis was to identify groups of Job Corps students who benefit from program participation and those who do not, so that policymakers can improve program services and target them appropriately. We estimated impacts of Job Corps on the following seven sets of subgroups: (1) gender, (2) age at application to Job Corps, (3) educational attainment, (4) presence of children for females, (5) arrest experience, (6) race and ethnicity, and (7) whether the

youth applied to the program before or after new zero tolerance (ZT) policies took effect.[2] Subgroup impact estimates were obtained by comparing the distribution of outcomes of program and control group members in that subgroup. For example, impacts for females were computed by comparing the outcomes of females in the program and control groups.

We estimated separate impacts for those assigned to the residential and nonresidential program components. These impacts were estimated using data on outreach and admission (OA) counselor predictions as to whether sample members would be assigned to a residential or a nonresidential slot. As part of the application process, OA counselors filled in this information on a special form developed for the study. The anticipated residential status information is available for both program *and* control group members, because it was collected prior to random assignment. Thus, the impacts of the residential component were estimated by comparing the distribution of outcomes of program group members designated for a residential slot with those of control group members designated for a residential slot. Similarly, the impacts of the nonresidential component were estimated by comparing the experiences of program and control group members designated for nonresidential slots. This analysis produced reliable estimates of program impacts for residential and nonresidential students, because the anticipated residential status information is available for all sample members, and because it matched actual residential status very closely for program group members who enrolled in Job Corps.

An important point about the interpretation of the impact findings for residents is that they tell us about the effectiveness of the residential component *for youths who are typically assigned to residential slots*. Similarly, the impact estimates for nonresidents tell us about the effectiveness of the nonresidential component *for youths who are typically assigned to nonresidential slots*. The results cannot necessarily be used to measure the effectiveness of each component for the *average* Job Corps student. Nor can the results be used to assess how a youth in one component would fare in the other one.

JOB CORPS EXPERIENCES

Job Corps staff have implemented a well-developed program model throughout the country (as described in a separate process analysis report by Johnson et al. [1999]). To understand the impacts that Job Corps had on the employment and related outcomes of participants, we must examine the Job Corps experiences of the program group. We can expect meaningful Job Corps impacts on key outcomes only if program group members received substantial amounts of Job Corps services. Thus, we examined whether program group members received services, and then gauged the intensity and types of those services.

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[2]In response to congressional concerns about the operation of the Job Corps program, and in particular, about safety on center, new ZT policies for violence and drugs were instituted in March 1995--during the sample intake period for the study. The new policies were instituted to ensure full and consistent implementation of existing policies for violence and drugs.

Our results, which indicate that program group members received extensive Job Corps services, can be summarized as follows:

Most program group members enrolled in Job Corps. Of those assigned to the program group, 73 percent reported enrolling in Job Corps within 30 months.

Participants typically enrolled very soon after random assignment. The average enrollee waited 1.5 months, or just over six weeks, to be enrolled in a Job Corps center, although two-thirds of those who enrolled did so in the first month, and only 4 percent enrolled more than six months after random assignment.

Most participants stayed in Job Corps for a substantial period of time, although the period of participation varied considerably. The average period of participation per enrollee was eight months. About 28 percent of all enrollees participated less than three months, and nearly a quarter participated for over a year. Because of this wide range in the duration of stay in Job Corps, participants left Job Corps at different points during the follow-up period.

Wide variations in the duration of participation in Job Corps resulted in a correspondingly wide distribution in how much of the 30-month follow-up period was actually a postprogram period. The average postprogram period for enrollees was 20 months. However, just over 15 percent of enrollees were out of Job Corps for less than one year, and almost 40 percent of enrollees were out for more than two years. Because enrollees varied so much in the amount of time observed after Job Corps, and because a substantial fraction had a short postprogram observation period, the 30-month employment and earnings results described later in this report should be interpreted as short-term impacts.

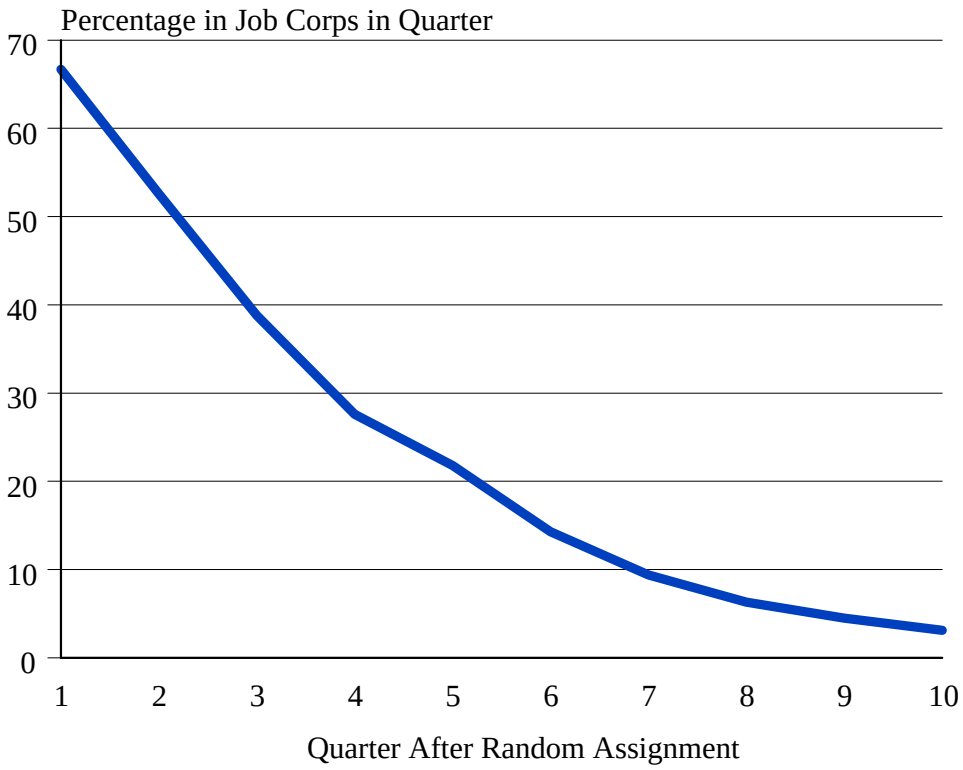
Most participation occurred during the first 24 months after random assignment; the final six months of the 30-month period was a postprogram period for most participants (Figure 1). Figure 1 shows the fraction of program group members (including the no-shows) who participated in Job Corps during each quarter after random assignment. The participation rate declined from a peak of 67 percent in the first quarter after random assignment to 22 percent in the fifth quarter (beginning of the second year), and 5 percent in the ninth quarter (beginning of the third year). By the end of the 30-month period, almost all participants had left Job Corps. Only 2 percent of the program group (3 percent of enrollees) were in Job Corps in the final week of the 30-month follow-up period.

Based on these broad patterns of participation, we interpret the period from quarters 1 to 4 (months 1 to 12) as largely an "in-program" period. The period from quarters 5 to 8 (months 13 to 24) was a period of transition, in which smaller yet still substantial fractions of the program group were engaged in Job Corps training. The final two quarters (months 25 to 30) were a postprogram period for most students. The use of these in-program, transition, and postprogram periods provides a framework to help understand the time profiles of employment and earnings and related impacts.

Program group enrollees participated extensively in the core Job Corps activities. As the program design intends, a large majority of Job Corps participants (77 percent) received both academic instruction and vocational training. About 83 percent of enrollees reported receiving

FIGURE 1

JOB CORPS PARTICIPATION RATES FOR THE FULL PROGRAM GROUP, BY QUARTER



Source: 12-month and 30-month follow-up interviews.

academic instruction, and 89 percent received vocational training. The average enrollee reported receiving over 1,000 hours of academic and vocational instruction (which is approximately equivalent to one year of classroom instruction in high school). Also, most enrollees participated in the many socialization activities in Job Corps, such as parenting education, health education, social skills, training, and cultural awareness classes. Many enrollees, however, reported that they did not receive job placement assistance from the program.

While many subgroups had different experiences in Job Corps, the differences were small. The mix of academic and vocational training a student received depended on whether the youth had already received a high school credential (GED or diploma) before program entry. Students with no credential generally took both academic instruction and vocational training. High school graduates were more likely to focus on vocational training. Nonresidential students (especially females with children) had somewhat lower enrollment rates than residential students. Once in Job Corps, however, the residential and nonresidential students had similar amounts, types, and intensity of training, as well as similar exposure to the other program components. The many other subgroup differences were small, and overall each group's experience was consistent with the conclusions drawn above for the program group as a whole. However, the modest differences in the period of participation across different subgroups may have contributed to some of the differences in impacts for subgroups presented later in this report.

EDUCATION AND TRAINING

Job Corps provides intensive academic classroom instruction and vocational skills training to increase the productivity and, hence, the future earnings, of program participants. The typical Job Corps student stays in the program for an extended period (about eight months on average), and Job Corps serves primarily students without a high school credential (about 80 percent of students do not have a GED or high school diploma at program entry). Thus, it is likely that participation in Job Corps increases the amount of education and training participants receive and improves their educational levels relative to what they would have been otherwise.

An important part of the impact analysis is to describe the education and training experiences of program and control group members, and to provide estimates of the impact of Job Corps on key education and training outcomes during the 30 months after random assignment. We examine education and training experiences of the *program group,* both in Job Corps and elsewhere, to provide a complete picture of the services they received. The education and training experiences of the *control group* are the counterfactual for the study, showing what education and training the program group would have engaged in had Job Corps not been available. The net increase in education and training due to Job Corps depends critically on what education and training the control group received and what education and training the program group received from other sources, as well as from Job Corps.

Our main findings can be summarized as follows:

Many control group members received substantial amounts of education and training. More than 64 percent participated in an education or training program during the 30 months after

random assignment. On average, they received 637 hours of education and training, roughly equivalent to about half a year of high school. Participation rates were highest in programs that substitute for Job Corps: GED programs (35 percent), high school (31 percent), and vocational, technical, or trade schools (21 percent).[3] These high participation rates are not surprising, because control group members demonstrated motivation to go to Job Corps, and thus had the motivation to find other programs.

It is notable that although high school participation rates were high, those who returned to high school stayed there for an average of only about nine months. Because the typical sample member without a high school credential at random assignment had completed less than grade 10, very few control group members graduated from high school.

Job Corps substantially increased the education and training that program participants received, despite the activity of the control group (Tables 1 and 2). Nearly 90 percent of the program group engaged in some education or training, compared to about 64 percent of the control group (an impact of 25 percentage points per eligible applicant). Job Corps participants spent about 7.7 hours per week--1,001 hours in total--more in programs than they would have if they had not enrolled in the program. This impact per participant corresponds to *roughly one school year*.

The program group also spent significantly more time in academic classes, and even more in vocational training (Table 2). Program group members spent an average of 4.6 hours per week in academic classes, as compared to 3.6 hours per week for the control group. The program group typically received about four times more vocational training than the control group (4.5 hours per week, compared to 1 hour per week).

The impacts on participation in education and training programs were concentrated in the first six quarters (that is, 18 months) after random assignment (Figure 2). Impacts were large during this period, because many program group members were enrolled in Job Corps then, but decreased as program group members started leaving Job Corps. About 76 percent of program group members were ever enrolled in an education or training program (including Job Corps and other programs) during the first quarter after random assignment, compared to 29 percent of control group members--an impact per eligible applicant of 47 percentage points. The impact on the participation rate decreased to 22 percentage points in quarter 3 and 11 percentage points in quarter 5. The impact was about 3.5 percentage points in quarter 7 and was not statistically significant in quarters 9 and 10.

Similar percentages of program and control group members were enrolled in education and training programs toward the end of the 30-month period. For example, about 16 percent of both research groups were enrolled in a program during the last week of the 30-month follow-up period. This finding is important, because it suggests that impacts on employment and earnings late in the 30-month period were not affected by differences in school enrollment rates by research status.

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[3]The participation rates in GED programs and high school pertain to those who did not have a GED or high school diploma at random assignment.

TABLE 1

IMPACTS ON PARTICIPATION AND TIME SPENT IN EDUCATION AND TRAINING PROGRAMS

	Program Group	Control Group	Estimated Impact per Eligible Applicant[a]	Estimated Impact per Participant[b]
Percentage Ever Enrolled in an Education or Training Program During the 30 Months After Random Assignment	89.7	64.4	25.4*	34.8*
Average Percentage of Weeks Ever in Education or Training	31.7	20.8	10.9*	14.9*
Average Hours per Week Ever in Education or Training	10.6	4.9	5.6*	7.7*
Sample Size	**7,311**	**4,476**	**11,787**	

SOURCE: 12- and 30-month follow-up interview data.

[a]Estimated impacts per eligible applicant are measured as the difference between the weighted means for program and control group members.

[b]Estimated impacts per Job Corps participant are measured as the estimated impacts per eligible applicant divided by the proportion of program group members who enrolled in Job Corps.

*Significantly different from zero at the .05 level, two-tailed test.

TABLE 2

IMPACTS ON PARTICIPATION AND TIME SPENT IN ACADEMIC CLASSES AND VOCATIONAL TRAINING

	Program Group	Control Group	Estimated Impact per Eligible Applicant[a]	Estimated Impact per Participant[b]
Percentage Ever Took Academic Classes During the 30 Months After Random Assignment	79.5	54.6	24.9*	34.1*
Average Hours per Week Ever in Academic Classes	4.6	3.6	1.0*	1.4*
Percentage Ever Took Vocational Training	71.5	20.9	50.6*	69.4*
Average Hours per Week Ever Received Vocational Training	4.5	1.0	3.5*	4.8*
Sample Size[c]	**3,262**	**2,039**	**5,301**	

SOURCE: 12- and 30-month follow-up interview data.

[a]Estimated impacts per eligible applicant are measured as the difference between the weighted means for program and control group members.

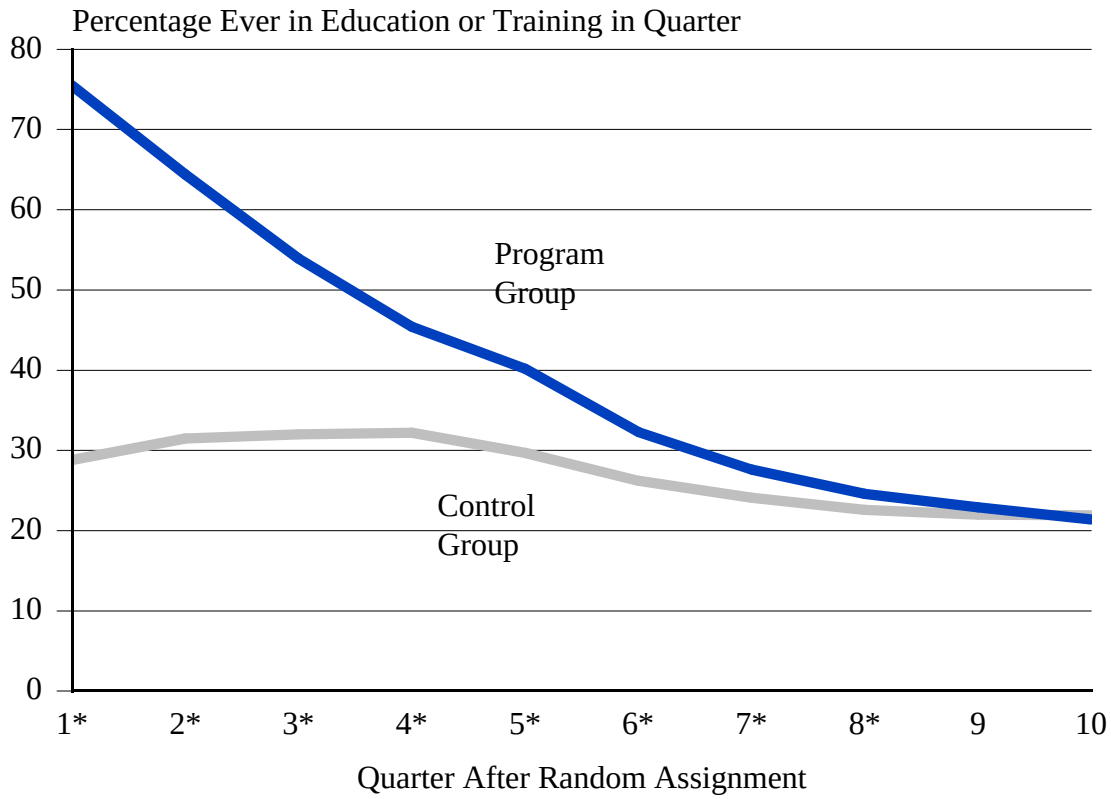
[b]Estimated impacts per Job Corps participant are measured as the estimated impacts per eligible applicant divided by the proportion of program group members who enrolled in Job Corps.

[c]The sample consists of only those whose 30-month interview took place after April 1998, because of an error in the 30-month interview's skip logic before then.

*Significantly different from zero at the .05 level, two-tailed test.

FIGURE 2

PARTICIPATION RATES IN EDUCATION AND TRAINING PROGRAMS, BY QUARTER



Source: Baseline, 12-month, and 30-month follow-up interviews.

*Difference between the mean outcome for program and control group members is statistically significant at the 5 percent level. This difference is the estimated impact per eligible applicant.

Control group members spent more time than program group members in programs other than Job Corps, although the differences were smaller than anticipated (Figure 3). About 64 percent of control group members enrolled in a program other than Job Corps during the 30-month period, compared to 54 percent of program group members. The differences in participation rates in programs that substitute for Job Corps (high school, GED programs, vocational schools, and ABE and ESL programs) are statistically significant. There were no differences in enrollment rates in two- or four-year colleges.[4]

While impacts on participation in alternative programs are statistically significant, they were smaller than expected. Program group members made considerable use of these same programs, which increased impacts on education and training and reduced the offset to Job Corps program costs.

Job Corps participation led to substantial increases in the receipt of GED and vocational certificates, but it led to slight reductions in the attainment of a high school diploma (Figure 4). Job Corps had large effects on the receipt of certificates that it emphasizes. Among those without a high school credential at random assignment, about 35 percent of program group members (and 40 percent of program group participants) obtained a GED during the 30-month period, compared to only 17 percent of control group members (an impact of 18 percentage points per eligible applicant). Similarly, about 28 percent of program group members (and 35 percent of Job Corps participants) reported receiving a vocational certificate, compared to about 8 percent of control group members (an impact of 20 percentage points).

Among those without a credential at baseline, a slightly higher percentage of control group members than program group members obtained a high school diploma (5.8 percent, compared to 4.3 percent). As noted above, although many of the younger control group members attended high school, most of those in high school did not complete it, because they attended high school for an average of only about nine months.

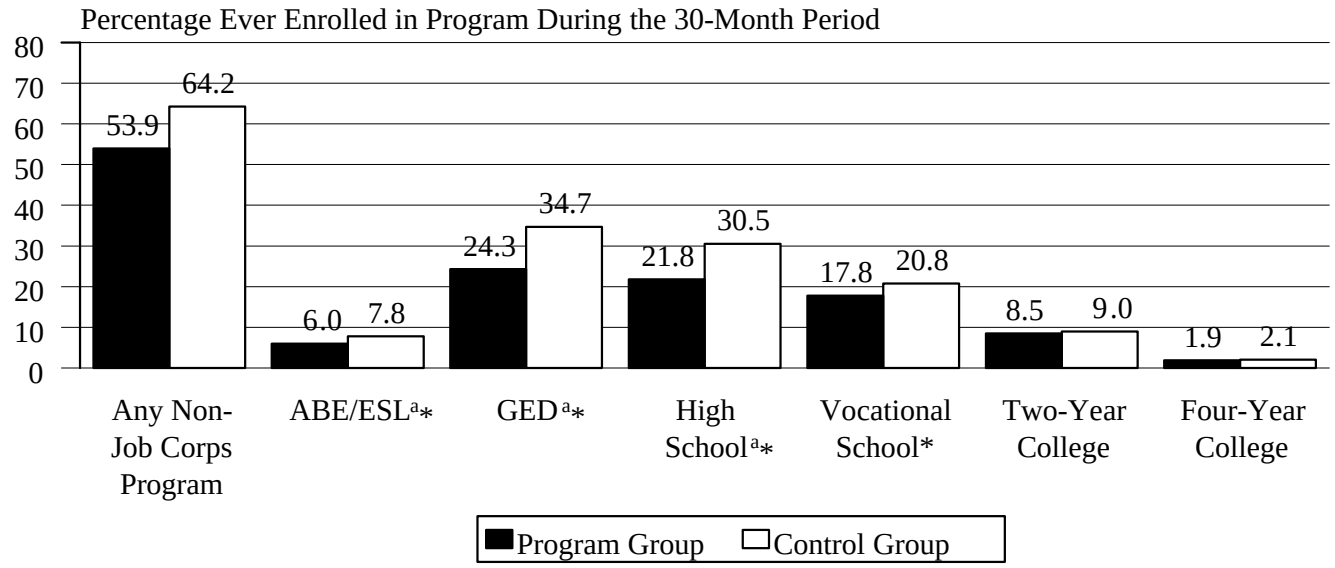
At 30 months after random assignment, college attendance and completion had not been affected (Figures 3 and 4). About 9 percent of each research group attended a two-year college, and about 2 percent attended a four-year college. Less than 1 percent obtained a two- or four-year college degree.

Impacts on education and training were large across all subgroups defined by youth characteristics. Impacts on total time spent in programs and on the attainment of a GED (among those without a high school credential at baseline) or vocational certificate were very large and statistically significant for all key subgroups. However, the pattern of impacts across subgroups defined by age at application to Job Corps exhibited some differences. There were no impacts on

[4]About 18 percent of Job Corps participants attended an education or training program during the follow-up period before they enrolled in Job Corps (that is, between their random assignment and Job Corps enrollment dates). Not surprisingly, most of this activity was high school attendance. About 40 percent of Job Corps participants enrolled in an education or training program after leaving Job Corps. About 62 percent of the no-shows enrolled in a program during the 30-month period.

FIGURE 3

PARTICIPATION IN EDUCATION AND TRAINING PROGRAMS,
BY TYPE OF PROGRAM



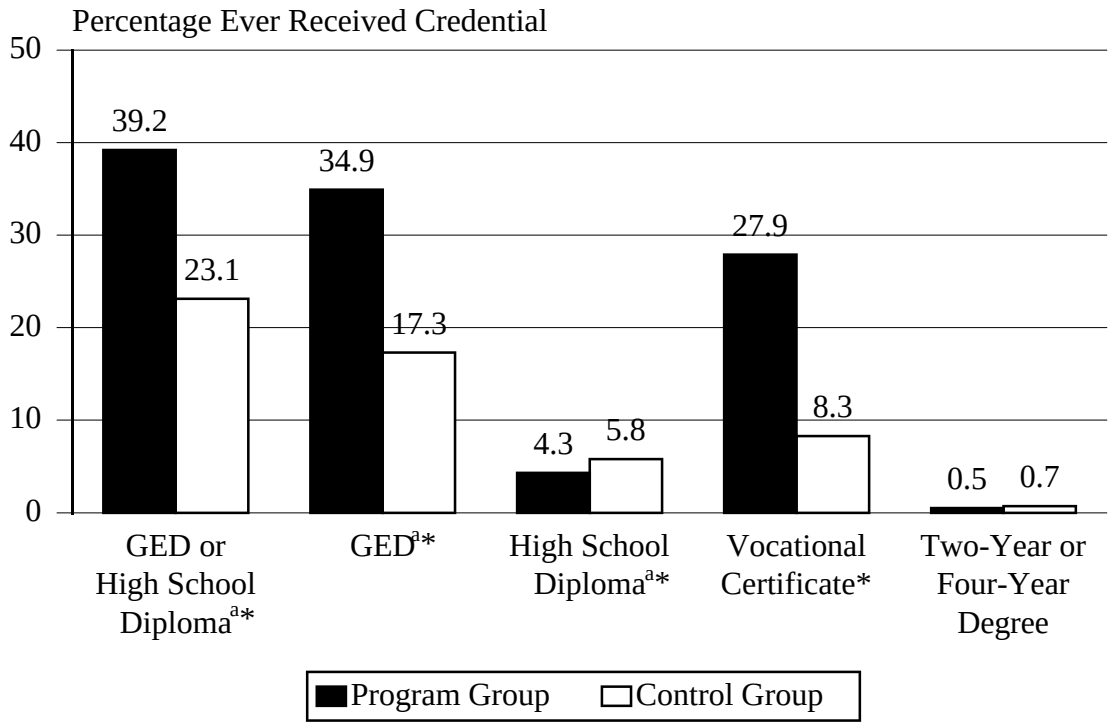
Source: Baseline, 12-month, and 30-month follow-up interviews.

[a]Figures pertain to those who did not have a high school diploma or GED at random assignment.

*Difference between the mean outcome for program and control group members is statistically significant at the 5 percent level. This difference is the estimated impact per eligible applicant.

FIGURE 4

DEGREES, DIPLOMAS, AND CERTIFICATES RECEIVED



Source: Baseline, 12-Month, and 30-Month Follow-up Interviews.

[a]Figures pertain to those who did not have a high school credential at random assignment.

*Difference between the mean outcome for program and control group members is statistically significant at the 5 percent level. This difference is the estimated impact per eligible applicant.

hours in academic classes for those 16 and 17, because nearly half of all control group members who were 16 and 17 attended academic classes in high school. However, large impacts were found on hours spent in academic classes for the older youth, and on hours spent in vocational training for all age groups.

Of particular note, impacts were similar for those assigned to the residential and nonresidential components. This is consistent with findings from the process analysis (Johnson et al. 1999) that nonresidential students are fully integrated into the academic and vocational components of Job Corps.

EMPLOYMENT AND EARNINGS

We have seen that Job Corps participation leads to large impacts on time spent in academic classes and vocational training and on the attainment of GED and vocational certificates. These large impacts could increase participants' skill levels and, hence, their labor market productivity. This increased productivity may in turn enhance the time spent employed, earnings, wage rates, and fringe benefits of former participants.

We expect negative impacts on participants' employment and earnings during the period of enrollment, because some would have held jobs if they had not gone to Job Corps. However, because of improvements in participants' skills, we expect positive impacts on employment and earnings after they leave the program and after a period of readjustment. In light of the variation in the duration of program participation and the period of readjustment, it is difficult to predict when positive impacts will emerge.

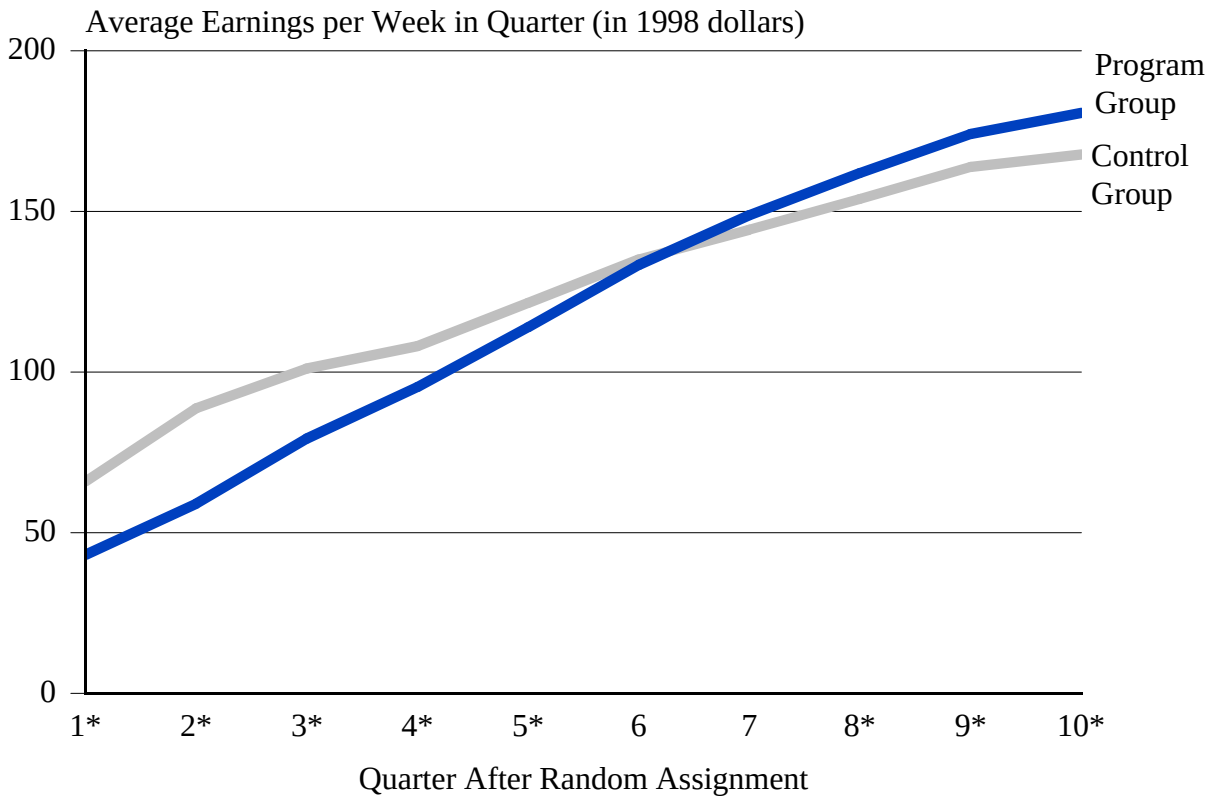
A summary of our findings is as follows:

Job Corps generated positive earnings impacts by two years after random assignment (Figure 5 and Table 3). As expected, the earnings of the control group were larger than those of the program group early in the follow-up period, because many program group members were enrolled in Job Corps then. It took about two years from random assignment for the earnings of the program group to overtake those of the control group. By the tenth quarter (that is, months 28 to 30) after random assignment, average weekly earnings for program group members were $13 higher than for control group members ($181, compared to $168). The estimated impact per Job Corps *participant* was $18, which translates into an 11 percent gain in average weekly earnings due to program participation. These quarter 10 impacts are statistically significant at the 1 percent significance level. In addition, the positive earnings impacts were increasing slightly during the later months of the 30-month observation period (that is, between quarters 8 and 10).

The earnings gains of participants that emerged after 24 months were not large enough to offset earnings losses while they were in the program. Over the whole period, Job Corps participants earned about $10 per week (or $1,300 overall) less than they would have if they had not enrolled in Job Corps. This impact is statistically significant and translates into an 8 percent reduction in earnings for the average participant over the first two and a half years after being determined eligible for Job Corps.

FIGURE 5

AVERAGE EARNINGS PER WEEK, BY QUARTER



Source: Baseline, 12-month, and 30-month follow-up interviews.

*Difference between the mean outcome for program and control group members is statistically significant at the 5 percent level. This difference is the estimated impact per eligible applicant.

TABLE 3

IMPACTS ON EARNINGS, EMPLOYMENT RATES, AND TIME EMPLOYED IN QUARTERS 8 TO 10

	Program Group	Control Group	Estimated Impact per Eligible Applicant[a]	Estimated Impact per Participant[b]
Average Earnings per Week, by Quarter After Random Assignment				
8	161.9	153.9	8.0*	10.9*
9	174.1	163.8	10.3*	14.1*
10	180.6	167.7	12.9*	17.7*
Percentage Employed, by Quarter				
8	59.9	58.4	1.6*	2.1*
9	63.8	62.4	1.4	2.0
10	66.9	64.8	2.1*	2.8*
Average Percentage of Weeks Employed, by Quarter				
8	49.9	49.5	0.4	0.6
9	53.2	52.5	0.7	1.0
10	55.7	53.8	1.9*	2.6*
Average Hours Employed per Week, by Quarter				
8	22.5	22.1	0.4	0.5
9	23.9	23.3	0.6	0.8
10	24.8	23.7	1.0*	1.4*
Sample Size	**7,311**	**4,476**	**11,787**	

SOURCE: 12- and 30-month follow-up interview data.

[a]Estimated impacts per eligible applicant are measured as the difference between the weighted means for program and control group members.

[b]Estimated impacts per Job Corps participant are measured as the estimated impacts per eligible applicant divided by the proportion of program group members who enrolled in Job Corps.

*Significantly different from zero at the .05 level, two-tailed test.

Job Corps had small but statistically significant impacts on the employment rate and time spent employed late in the follow-up period (Figure 6 and Table 3). The impacts on the employment-related measures were negative during the in-program period, but they became positive in quarter 8. In quarter 10, the impact on the employment rate was about 2 percentage points per eligible applicant (67 percent for the program group, compared to 65 percent for the control group). The quarter 10 impact on hours employed per week was 1 hour per eligible applicant (25 hours for the program group, compared to 24 hours for the control group).

The earnings gains late in the period were due to a combination of greater hours of work and higher earnings per hour. Program group members earned about $8 more per week in quarter 10 than control group members because they worked more hours, and they earned about $5 more per week because they had higher earnings per hour. These gains sum to the $13 impact on earnings per week in quarter 10.

Program group members secured higher-paying jobs with slightly more benefits in quarter 10. These findings suggest that Job Corps increases participants' skill levels and, hence, productivity. In the most recent job in quarter 10, the average hourly wage rate was $0.25 higher for the employed program group than for the employed control group ($7.07 as compared to $6.82), although job tenure was typically shorter for the employed program group. Furthermore, the wage gains were similar across broad occupational categories, although similar percentages of program and control group members worked in each occupational area.

Employed program group members were slightly more likely to hold jobs that offered fringe benefits. For example, about 41 percent of the employed program group were offered retirement or pension benefits, compared to 38 percent of the employed control group (a statistically significant increase of 3 percentage points, or about 8 percent). Similarly, about 50 percent of the employed program group were offered health insurance, compared to 48 percent of the control group.

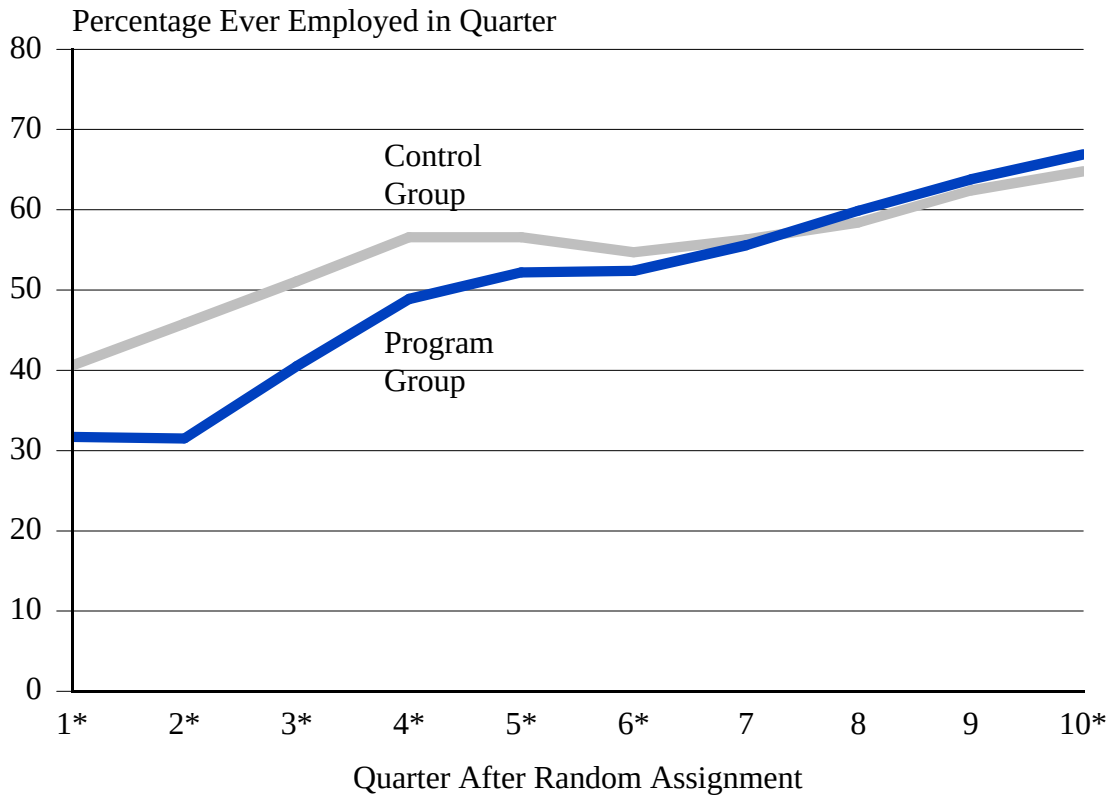
Impacts near the end of the 30-month follow-up period were somewhat larger for youths who are at particular risk of poor labor market outcomes. Positive short-term gains were found broadly across most key subgroups defined by youth characteristics at baseline. However, there is some evidence that impacts were larger for very young students, females with children at random assignment, and older youths who did not possess a high school credential at random assignment. While the impact per participant on earnings per week in quarter 10 was $18 for the full sample (an 11 percent gain), it was $26 for those 16 and 17 (a 19 percent gain), $30 for females with children (a 24 percent gain), and $36 for 20- to 24-year-old students without a high school credential (a 22 percent gain).

The residential program component was effective in the short term for broad groups of students. Earnings and employment impacts in quarter 10 for those assigned to the residential component were positive overall, and they were similar for residential males, females with children, and females without children.

The nonresidential component substantially improved short-term employment and earnings of females with children, but it did not improve these outcomes for males or for females without children. For females with children, participation in the nonresidential component

FIGURE 6

EMPLOYMENT RATES, BY QUARTER



Source: Baseline, 12-month, and 30-month follow-up interviews.

*Difference between the mean outcome for program and control group members is statistically significant at the 5 percent level. This difference is the estimated impact per eligible applicant.

improved earnings per week in quarter 10 by more than $45--an increase of 37.5 percent. The estimated impacts on earnings for males and females without children were small and not statistically significant.

We emphasize again that the impact findings by residential status should be interpreted with caution. As discussed, our estimates provide information about the effectiveness of each component for the populations it serves. The estimates cannot be used to assess how a youth in one component would fare in the other one, or how effective each component would be for the average Job Corps student. This is because the characteristics of residents differ from those of nonresidents in ways that can affect outcomes.

WELFARE, CRIME, ILLEGAL DRUG USE, AND OTHER OUTCOMES

The study examines the impacts of Job Corps on several additional outcomes to help assess whether the program achieves its goals of helping students become more responsible and productive citizens. This section reports on impacts on welfare dependence; involvement with the criminal justice system; use of tobacco, alcohol, and illegal drugs; the overall health of participants; the likelihood of bearing or fathering children while unmarried; custodial responsibility; the likelihood of forming stable, long-term relationships; and mobility.

Our main results are as follows:

Job Corps participation reduced the receipt of public assistance benefits (Table 4). Overall, program group members reported receiving about $300 less in benefits (across several public assistance programs) than control group members, and this impact is statistically significant. The estimated program impacts on the receipt of individual types of assistance were small and in many cases not statistically significant. The number of months receiving AFDC/TANF benefits differed by just 0.2 months (3.5 months for the program group and 3.7 for the control group). Control group members received food stamps for slightly more months on average than program group members (4.6 months as compared to 4.2 months). Impacts on the receipt of GA, SSI, and WIC benefits and on the likelihood of being covered by public health insurance were small.

Contrary to our expectations that reductions in welfare benefits would be concentrated during the in-program period, when students' material needs were met by the program, the reductions in benefit receipt were fairly uniform across the 30-month follow-up period. To some extent, this reflects different time patterns of the impacts for different groups. The benefit reductions for males were uniform throughout the follow-up period. For females without children at baseline, benefit reductions were largest early in the follow-up period and then declined to nearly zero. In contrast, the benefit reductions for females with children at baseline, most of whom were nonresidential students, were negligible during the in-program period, when welfare helped support the participant and her child, but became larger during the postprogram period, when earnings also increased.

Job Corps participation significantly reduced arrest and conviction rates, as well as time spent in jail (Table 4). About 27.7 percent of control group members were arrested during the 30-month follow-up period, compared to 23.3 percent of program group members (a statistically

TABLE 4

IMPACTS ON KEY PUBLIC ASSISTANCE AND CRIME OUTCOMES

	Program Group	Control Group	Estimated Impact per Eligible Applicant[a]	Estimated Impact per Participant[b]
Average Amount of Benefits Received, by Period (in Dollars)				
All months	2,451.7	2,761.1	-309.5*	-424.5*
Months 1 to 12	1,044.2	1,167.5	-123.3*	-169.2*
Months 13 to 24	935.4	1,052.7	-117.3*	-160.9*
Months 25 to 30	460.7	519.7	-59.0*	-80.9*
Percentage Arrested or Charged with a Delinquency or Criminal Complaint, by Period				
All months	23.3	27.7	-4.4*	-6.1*
Months 1 to 12	11.6	14.5	-2.9*	-4.0*
Months 13 to 24	11.3	12.1	-0.8	-1.1
Months 25 to 30	7.6	8.9	-1.3*	-1.7*
Percentage Convicted, Pled Guilty, or Adjudged Delinquent During the 30 Months After Random Assignment	17.0	20.5	-3.5*	-4.8*
Percentage Served Time in Jail for Convictions During the 30-Month Period	11.3	14.0	-2.8*	-3.8*
Average Weeks in Jail for Convictions During the 30-Month Period	2.5	3.1	-0.6*	-0.8*
Sample Size	**7,311**	**4,476**	**11,787**	

SOURCE: 12- and 30-month follow-up interview data.

[a]Estimated impacts per eligible applicant are measured as the difference between the weighted means for program and control group members.

[b]Estimated impacts per Job Corps participant are measured as the estimated impacts per eligible applicant divided by the proportion of program group members who enrolled in Job Corps.

[c]Benefits include AFDC/TANF, food stamps, SSI/SSA, and General Assistance.

*Significantly different from zero at the .05 level, two-tailed test.

significant impact of -4.4 percentage points per eligible applicant). The impact per participant was -6.1 percentage points, which translates to a 22 percent reduction in the arrest rate due to program participation. Reductions in the arrest rates were largest during the first year after random assignment (when most program enrollees were in Job Corps). Interestingly, however, arrest reductions were also statistically significant during the later months of the follow-up period, after most youths had left Job Corps.

Program group members were less likely to have arrest charges for all categories of crimes. However, reductions were slightly larger for less serious crimes (such as disorderly conduct and trespassing).

Job Corps participation also reduced convictions and incarcerations resulting from a conviction. Nearly 21 percent of control group members were ever convicted during the follow-up period, compared to 17 percent of program group members. Similarly, Job Corps reduced the percentage incarcerated for convictions by 3 percentage points (from 14 percent to 11 percent) and the average time spent in jail by about 4 days.

Although the level of criminal activity differed substantially across youth subgroups, the impacts on crime outcomes were very similar (in particular, by gender and age). We find some differences, however, in crime impacts by residential status. Job Corps reduced arrest rates for male residents, female residents, and female nonresidents. However, impacts were smaller for male nonresidents.

Job Corps had no impacts on the self-reported use of tobacco, alcohol, and illegal drugs. This finding applied for the full sample and for key subgroups. Job Corps also had little effect on time spent in drug treatment.

Job Corps participation improved participants' perceived health status. At each interview, about 18 percent of the control group and 15 percent of the program group said their health was "poor" or "fair."

Job Corps had no impacts on family formation, either for the full sample or for youth subgroups. About 25 percent of those in both the program and control groups had a child during the follow-up period (32 percent of females and 19 percent of males), and about 85 percent of children were born out of wedlock. About one-quarter of each group was living with a partner at the 30-month interview. Less than 40 percent of male parents in each group were living with all their children, but about 80 percent of male parents were providing support for noncustodial children.

Job Corps had no impact on mobility. The distance between the zip codes of residence at application to Job Corps and at the 30-month interview was less than 10 miles for about three-quarters of both research groups. Furthermore, the average characteristics of the counties of residence at 30 months were similar for program and control group members, and they were similar to the average county characteristics of residence at the time the youths applied to Job Corps.

CONCLUDING OBSERVATIONS

Job Corps provided participants with the instructional equivalent of one additional year in school. Enrollees reported receiving extensive Job Corps services. Overall, they received an average of about 1,000 hours of academic classroom instruction and vocational training that they would not have received otherwise. This is approximately the hours of instruction delivered in a typical school year. These impacts on education and training could have led to the postprogram earnings gains we observed.

Of course, Job Corps also provides other services that could have contributed to the postprogram earnings gains. It provides a residential living program, health care, and a broad range of services designed to help youth who have not succeeded in school to become productive young adults. Many staff and observers of the program believe that the distinctive residential component of Job Corps is a key ingredient, both because the residential component is necessary for delivering effective academic and vocational instruction and because the experience of living in a community committed to learning has intrinsic benefits apart from the formal education and training that Job Corps provides. Because of the comprehensive nature of Job Corps, it is not possible to determine the relative contributions of the different parts of the program to the beneficial short-term impacts that we find. However, viewing Job Corps as providing an additional year of schooling offers a way to place the short-term earnings impacts into perspective.

Earnings gains observed early in the third year after random assignment are commensurate with what would be expected from an additional year of school. Economists have long been concerned about the returns to schooling. They pose the question: how much difference does an additional year of schooling make in the lifetime earnings of an individual? The answers they have developed over the last two decades provide an important perspective on the study's short-term findings.

Studies of the average returns to a year of schooling consistently find that a year of schooling increases earnings over a worker's lifetime by 5 to 8 percent. Measured in hours spent in academic classes and vocational training, Job Corps provided roughly the equivalent of a year of additional schooling per participant. In this context, the 11 percent earnings gains per participant observed near the end of the 30-month period are in line with what one would expect from an intensive education and training program that serves primarily school-aged youth. Observing whether these modest gains persist, increase, or decrease over a longer follow-up period will be critical for forming a judgment about whether Job Corps is a good investment for students and for the public.

The residential and nonresidential programs serve different groups of students, and each is effective for the groups it serves. Impacts on earnings for residential students were positive near the end of the follow-up period for most groups. Short-term earnings impacts for nonresidential students were also positive overall. Yet it is not appropriate to conclude that the residential component could be abolished and everyone served just as well in the nonresidential component. Indeed, our findings point to the opposite conclusion. The nonresidential component appears to provide positive benefits for females with children, but not for males or for females with no children. Thus the nonresidential program provides an avenue of participation in Job Corps--and commensurate earnings gains--for a group who would be unable to participate in the residential Job

Corps program because of family responsibilities. The finding that males and females without children who participate in the nonresidential component derive no net benefit over and above the benefit they can get from the many other education and training opportunities available in the community appears very consistent with the finding on youth from the National JTPA Study.[5]

Most subgroups of students benefited from Job Corps. Positive short-term earnings gains were observed for most groups, including those defined by gender, age, race and ethnicity, arrest experience, and whether the youth applied to the program before or after the new ZT policies took effect. Thus, overall positive impacts were not due to the experiences of a particular group but were widespread throughout the population that the program serves. Nevertheless, the impacts for several particularly vulnerable or difficult-to-serve groups are especially noteworthy.

The positive impacts for 16- and 17-year-old youth are striking. For this group: (1) earnings gains per participant were nearly 20 percent by the end of the follow-up period, (2) the percentage earning a high school diploma or GED was up by 80 percent, and (3) arrest rates were reduced by 14 percent and rates of incarceration for a conviction were reduced by 26 percent. Indeed, the average total earnings of 16- and 17-year-old participants over the entire 30-month period were higher than they would have been had they not participated in Job Corps (although the impact is not statistically significant). While staff find this group difficult to deal with, and while more of them leave Job Corps before completing their education and training than do older students, the youngest age group appears to benefit substantially from their program experiences soon after they leave the program. It will be especially important to observe the time trajectory of the impacts for this group over a longer period.

Among older students, the greatest earnings gains were among those who lacked a high school credential. We speculate that these students benefited from what Job Corps offers: a highly structured environment and intensive instruction in academic subjects and in a trade. Older students who were better prepared academically did well in Job Corps, but they were also more likely to do well in other education and training settings and the workplace. Consequently, Job Corps was less able to raise their employment and earnings. Of course, we need to wait for longer-term impacts to be confident that short-term gains of older students were not lower solely because it took longer for the benefits of their participation to become apparent.

Females with children at the time of enrollment enjoyed significant earnings gains and modest reductions in welfare receipt. As noted, most young women with children enrolled in Job Corps as nonresidential students, because child-rearing responsibilities required that they live at home. However, these young women received similar amounts of academic classroom instruction and vocational training as other students, despite living at home, and enjoyed higher-than-average increases in their earnings near the end of the 30-month follow-up period.

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[5]Orr, L., H. Bloom, S. Bell, F. Doolittle, W. Lin, and G. Cave. *Does Training for the Disadvantaged Work? Evidence from the National JTPA Study.* Washington DC: Urban Institute Press, 1996.

In conclusion, the 48-month interview data will be used to assess whether the beneficial employment, earnings, and related impacts that we have found in the short term, and the pattern of impacts across subgroups, persisted past the 30-month point. This future analysis will provide a more complete answer to the question of whether Job Corps is a worthwhile investment for the students who devote an average of eight months to the program, and for the broader society that supports their efforts.